

Ag-air Service

Agricultural aerial application—"ag-air" for short—is a billion dollar industry in the United States, involving more than 10,000 aircraft spreading insecticides, herbicides, fertilizer, seed and other materials over millions of acres of farmland. It is an extremely varied industry and no two ag-air businesses are exactly alike. An operator may have one airplane or several. He may spray a 20-acre field one day and a 500-acre field the next. The target field may be close to his base or some distance away, a factor in airplane fuel expenditure. Crops treated differ from one job to the next, as do the materials applied—and costs of both materials and fuel change rapidly. In this unique, multivariable business atmosphere, ag-air operators face unusual problems. For example, it is difficult for an operator to estimate costs accurately and thus decide what to charge, or to determine which airplane can handle which assignment most efficiently.

To fill an informational need in the industry, Econ, Inc., a Princeton, New Jersey economics research firm is providing a computerized service designed to improve

business efficiency in two key decision-making areas: choice of aircraft and determination of charge rates based on realistic operating cost data. The Ag-air Cost Effectiveness Analysis Service is a spinoff from a NASA study—performed by Econ—intended to help NASA chart a program of technology development in areas most beneficial to operators and manufacturers of agricultural aircraft.

In the course of the study, Econ built a comprehensive data base on worldwide ag-air operations, including aircraft costs, materials costs, job times and many other variables. Updated and expanded, this information served as the keystone for Econ's economic analysis service. Econ asks subscribers to fill out detailed forms describing the characteristics of aircraft in service or planned, together with information about the operator's applications—types of crops treated, materials used, field sizes, hours flown and a variety of other factors. For a moderate fee, Econ supplies a custom-tailored computer printout which allows easy computation of time, cost and charge for a specific job. Also provided is a cost/productivity comparison of various types of ag-aircraft, enabling the operator to select the craft best suited to his particular business mix.

TIME TABLES

PLANE: CURRENT AC CROP: COTTON MATERIAL: HERBICIDE APPLICATION RATE: 5 GAL/ACRE

TIME (IN HOURS) REQUIRED TO FLY THE FERRY DISTANCE FROM HOME BASE TO THE LOADING AREA

FERRY DISTANCE IN MILES	20 0	40 0	60 0	80 0	120 0	160 0	240 0	320 0	640 0
0 0	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000
2 0	0 033	0 033	0 033	0 033	0 033	0 033	0 033	0 033	0 033
5 0	0 083	0 083	0 083	0 083	0 083	0 083	0 083	0 083	0 083
8 0	0 133	0 133	0 133	0 133	0 133	0 133	0 133	0 133	0 133
12 0	0 200	0 200	0 200	0 200	0 200	0 200	0 200	0 200	0 200
15 0	0 250	0 250	0 250	0 250	0 250	0 250	0 250	0 250	0 250
30 0	0 500	0 500	0 500	0 500	0 500	0 500	0 500	0 500	0 500
40 0	0 667	0 667	0 667	0 667	0 667	0 667	0 667	0 667	0 667

TIME (IN HOURS) REQUIRED TO FLY THE FERRY DISTANCE FROM THE LOADING AREA TO THE FIELD

FERRY DISTANCE IN MILES	20 0	40 0	60 0	80 0	120 0	160 0	240 0	320 0	640 0
1 0	0 017	0 017	0 017	0 017	0 025	0 033	0 044	0 059	0 116
2 0	0 033	0 033	0 067	0 067	0 100	0 133	0 177	0 237	0 463
3 0	0 050	0 050	0 100	0 100	0 150	0 200	0 265	0 355	0 695
5 0	0 083	0 083	0 167	0 167	0 250	0 333	0 442	0 592	1 158
7 0	0 117	0 117	0 233	0 233	0 350	0 467	0 618	0 828	1 622
10 0	0 167	0 167	0 333	0 333	0 500	0 667	0 883	1 183	2 317
15 0	0 250	0 250	0 500	0 500	0 750	1 000	1 325	1 775	3 475
20 0	0 333	0 333	0 667	0 667	1 000	1 333	1 767	2 317	4 633
40 0	0 667	0 667	1 333	1 333	2 000	2 667	3 533	4 633	9 267

TIME (IN HOURS) REQUIRED TO FLY THE FERRY DISTANCE FROM THE FIELD TO THE LOADING AREA

FERRY DISTANCE IN MILES	20 0	40 0	60 0	80 0	120 0	160 0	240 0	320 0	640 0
1 0	0 017	0 017	0 017	0 017	0 025	0 033	0 044	0 059	0 116
2 0	0 033	0 033	0 067	0 067	0 100	0 133	0 177	0 237	0 463
3 0	0 050	0 050	0 100	0 100	0 150	0 200	0 265	0 355	0 695
5 0	0 083	0 083	0 167	0 167	0 250	0 333	0 442	0 592	1 158
7 0	0 117	0 117	0 233	0 233	0 350	0 467	0 618	0 828	1 622
10 0	0 167	0 167	0 333	0 333	0 500	0 667	0 883	1 183	2 317
15 0	0 250	0 250	0 500	0 500	0 750	1 000	1 325	1 775	3 475
20 0	0 333	0 333	0 667	0 667	1 000	1 333	1 767	2 317	4 633
40 0	0 667	0 667	1 333	1 333	2 000	2 667	3 533	4 633	9 267

TIME (IN HOURS) REQUIRED TO FLY THE FERRY DISTANCE FROM THE FIELD TO THE LOADING AREA (INCLUDES RUN-UP AND TAKE-OFF)

FERRY DISTANCE IN MILES	20 0	40 0	60 0	80 0	120 0	160 0	240 0	320 0	640 0
1 0	0 017	0 017	0 017	0 017	0 025	0 033	0 044	0 059	0 116
2 0	0 033	0 033	0 067	0 067	0 100	0 133	0 177	0 237	0 463
3 0	0 050	0 050	0 100	0 100	0 150	0 200	0 265	0 355	0 695
5 0	0 083	0 083	0 167	0 167	0 250	0 333	0 442	0 592	1 158
7 0	0 117	0 117	0 233	0 233	0 350	0 467	0 618	0 828	1 622
10 0	0 167	0 167	0 333	0 333	0 500	0 667	0 883	1 183	2 317
15 0	0 250	0 250	0 500	0 500	0 750	1 000	1 325	1 775	3 475
20 0	0 333	0 333	0 667	0 667	1 000	1 333	1 767	2 317	4 633
40 0	0 667	0 667	1 333	1 333	2 000	2 667	3 533	4 633	9 267